

Sugarcane Fertilizer Recommendations for 2020

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Soil Fertility Priorities

1. Soil pH

2. Nitrogen

3. Potassium

4. Sulfur

5. Starter Fertilizer

6. Micronutrients (Zn, **B**, Co)

7. Phosphorus (at planting?)

Why, when and how should I apply lime?

Why add Lime?

- *To adjust soil pH to improve fertilizer use efficiency by maximizing nutrient availability.*

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Lime when:

- Soil pH < 5.8 on sandy loam & silt loam soils.
- Soil pH < 5.2 on clay loam & clay soils.

How to apply Lime:

- Broadcast lime to fallow fields, or in fall or winter.
- The lime rate should be based on soil test and ideally should raise soil pH to 6.5.
- Pay attention to lime quality: CCE, particle size distribution.

USDA & LSU Cooperative Nitrogen Fertilizer Experiments (2007-2019)

- Varieties: HoCP 96-540, L 97-128, Ho 95-988, CP 89-2143, L 99-226, Ho 00-950, L01-283, L 79-1002, L 01-299, L03-371, HoCP 04-838, **HoCP 09-804**.
- Crop Age: PC, 1R, 2R, 3R
- Soil Type: Light, Heavy
- N rates: 0, 40, 80, 120, 160 lbs N/A (32% UAN)
- A total of 90 studies

Nitrogen Fertilizer Recommendations for 2020

- **Plant cane:** light soils: 60-80 lb N/A
- **Plant cane:** heavy soils: 80-100 lb N/A
- **Stubble cane:** light soils: 80-100 lb N/A
- **Stubble cane:** heavy soils: 100-120 lb N/A
- Recommendations take into account data from multiple years and soil types.
- Note that these recommendations assume a proper soil pH and an application date of April 1 - 30.

Will Late Fertilizer Application Effect Sugar Yields?

Current N recommendations are optimized for an application date between late March and early May.

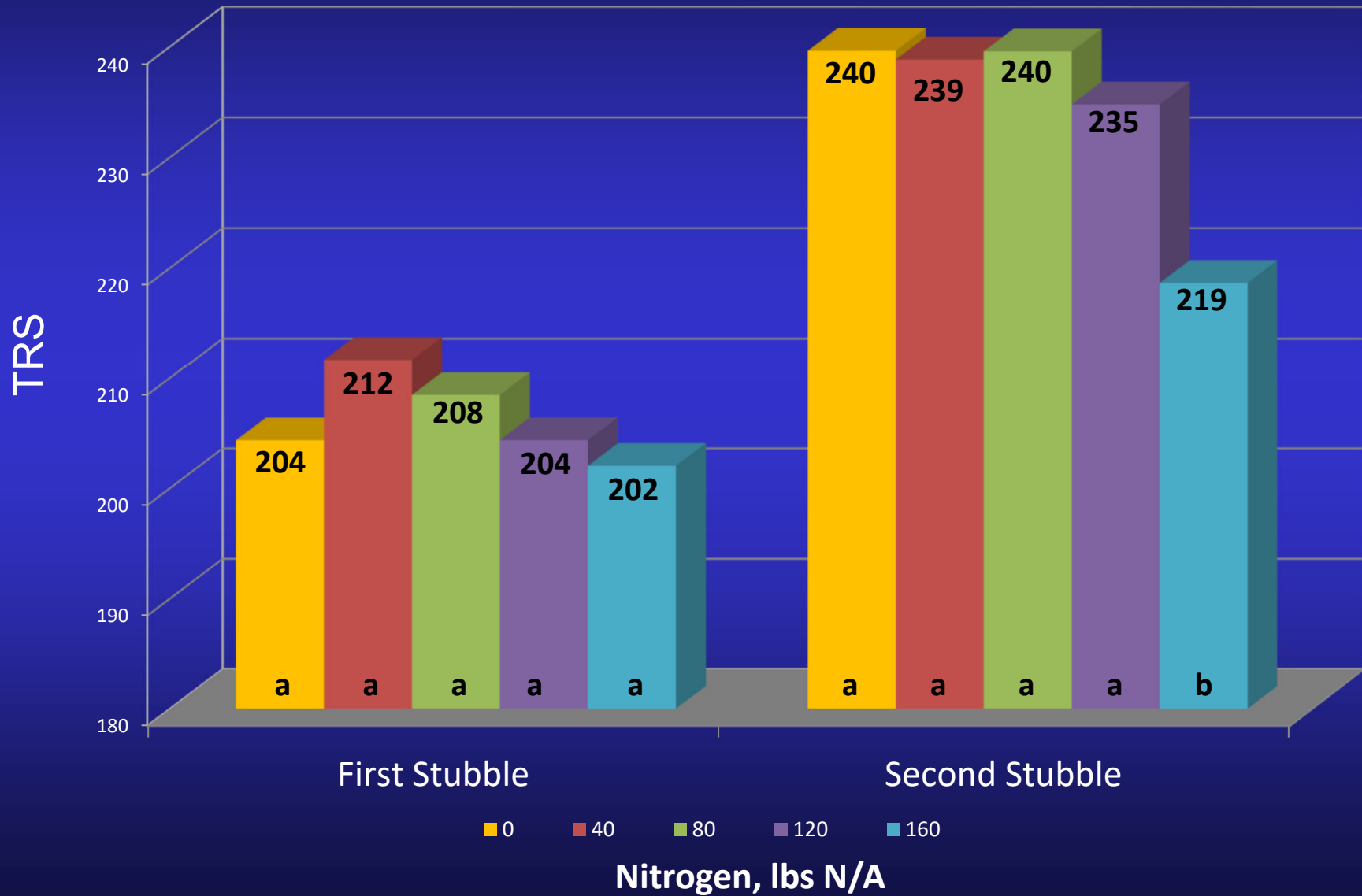
Application before this time frame may allow for greater loss of N due to lower uptake from an immature crop.

Application after this date (without adjusting rates) may result in delayed maturity (low TRS), particularly with stubble crops harvested early.

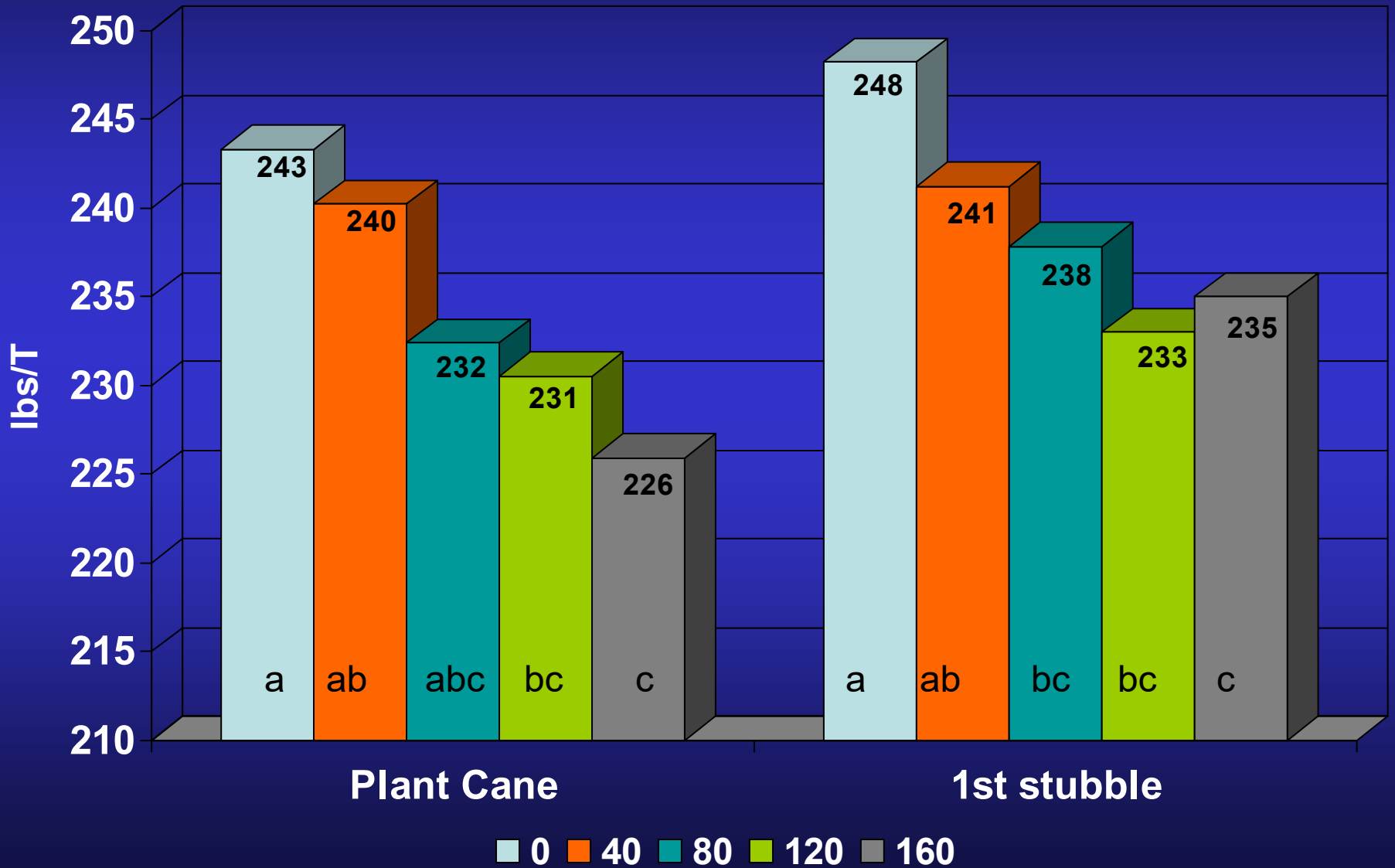
Goal: *Apply sufficient N to supply crop needs during grand growth stage (maximize tons), but avoid excess N that may interfere with crop maturation (TRS).*

P = .05

Response to Nitrogen Fertilizer L 01-299, TRS, 2015

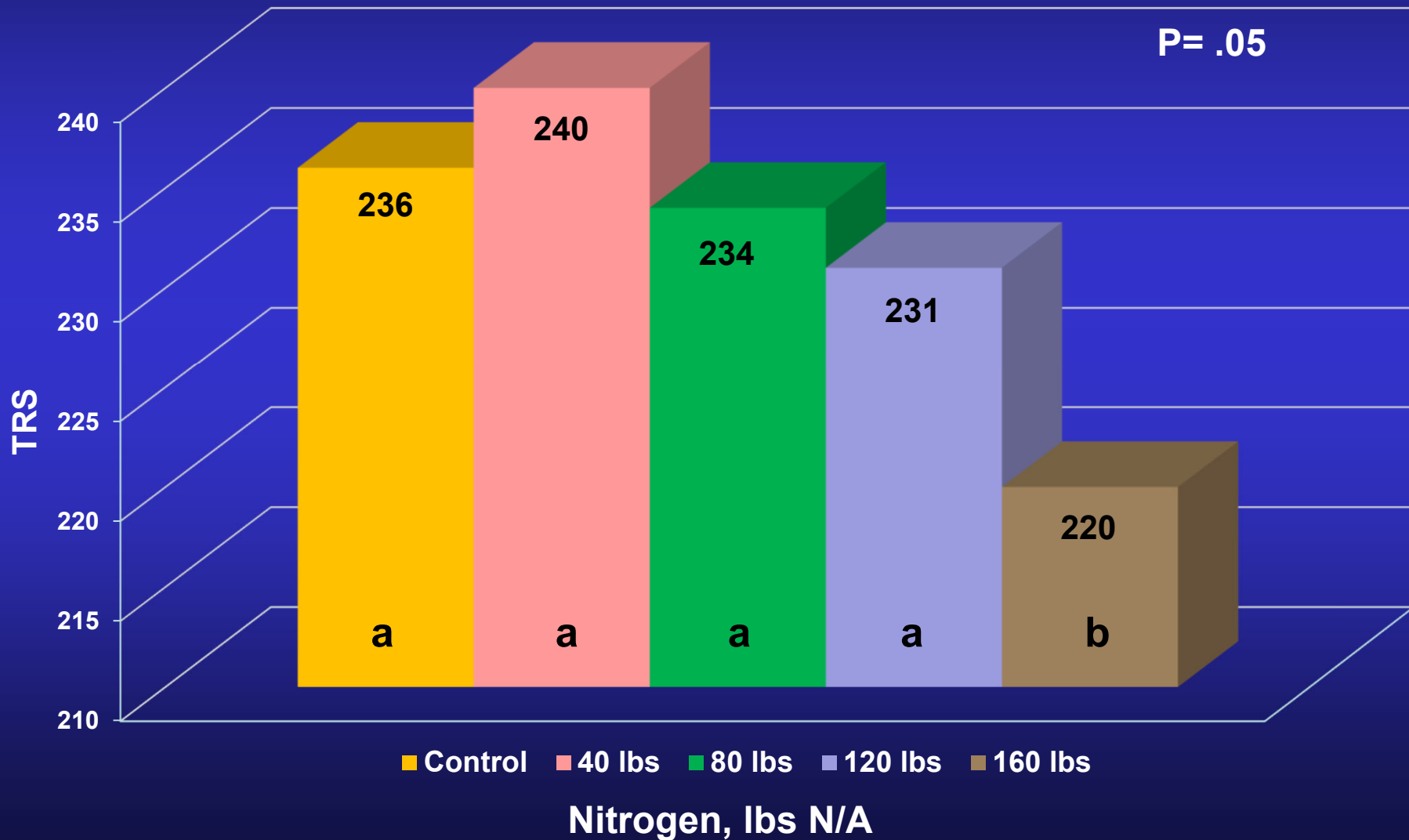


Nitrogen Rate x Harvest Date, HoCP 96-540, TRS, Plant cane and 1st stubble, USDA, 2008



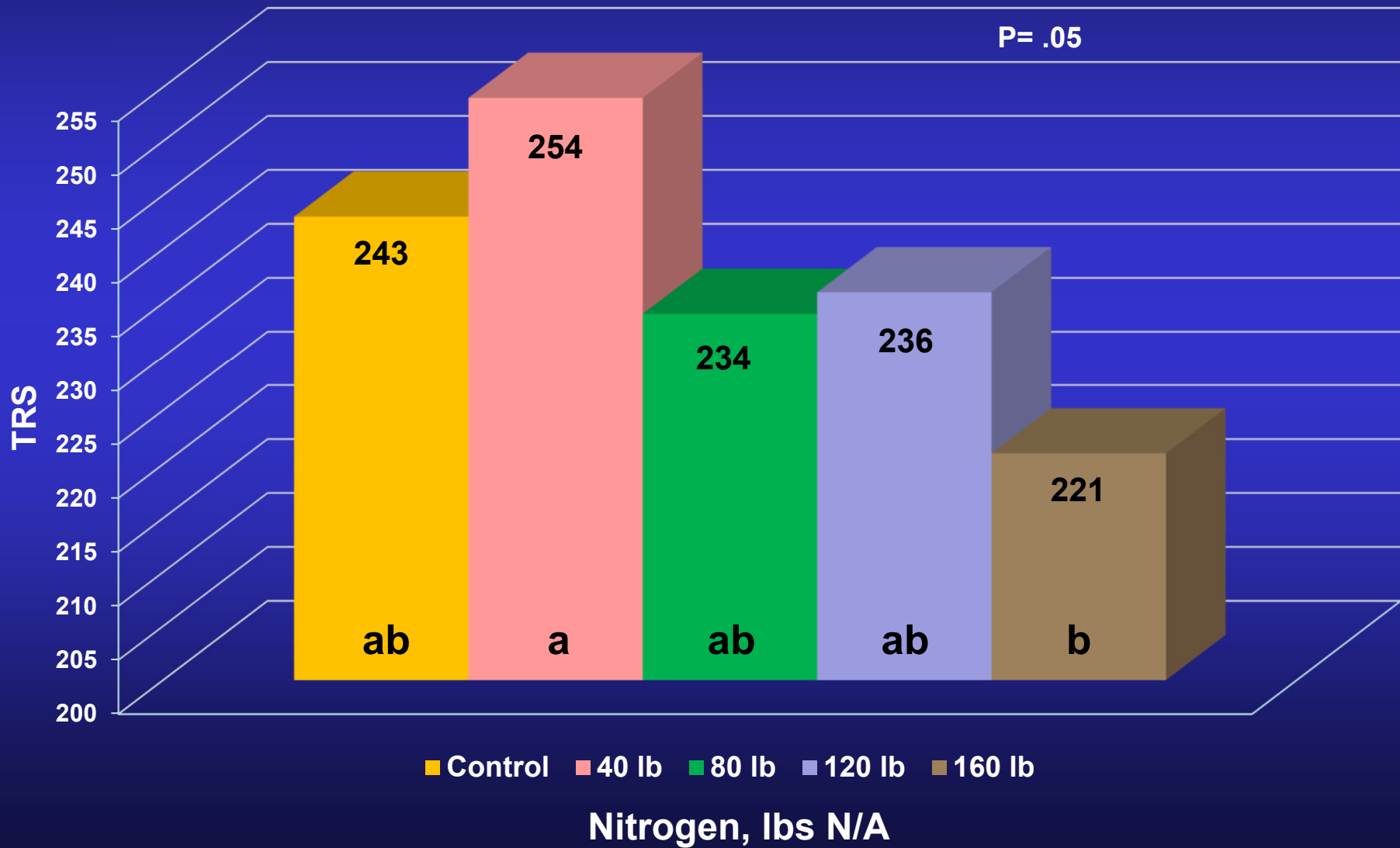
Response to Nitrogen Fertilizer

HoCP 09-804, Plant Cane, TRS, Hebert Brothers, 2019



Response to Nitrogen Fertilizer

HoCP 09-804, 1st Stubble, TRS, Naquin, 2019

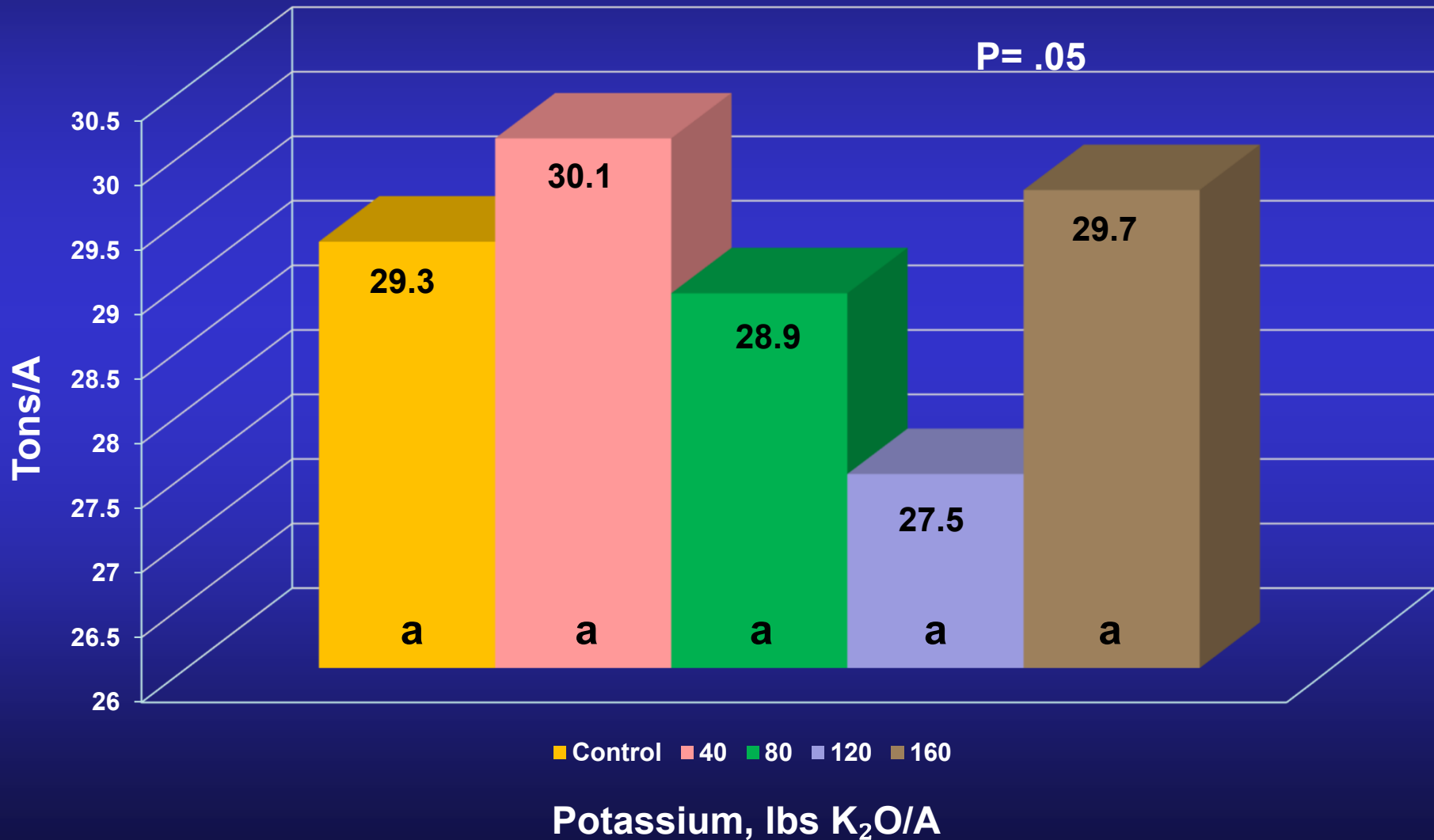


USDA Potassium Fertilizer Studies, 2011-2019

- Varieties: HoCP 96-540, L01-299
- Crop Age: PC, 1R, 2R
- All soils tested low or medium for potassium
- K rates: 0, 40, 80, 120, 160 lb K₂O/A (KCl)
- Reps: 6

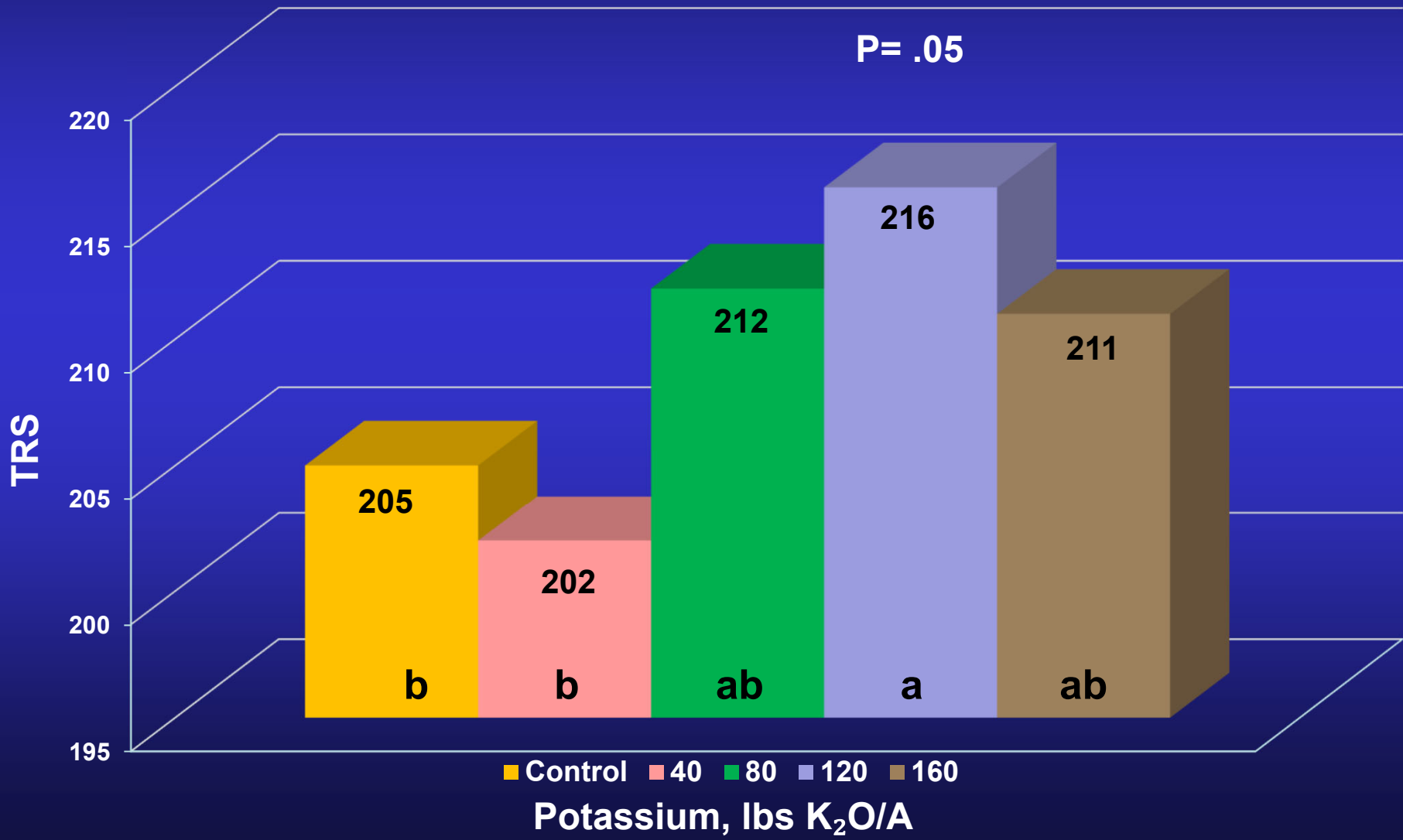
Response to Potassium Fertilizer

HoCP 96-540, 1st Stubble, Tons/A, Ronald Hebert, 2019



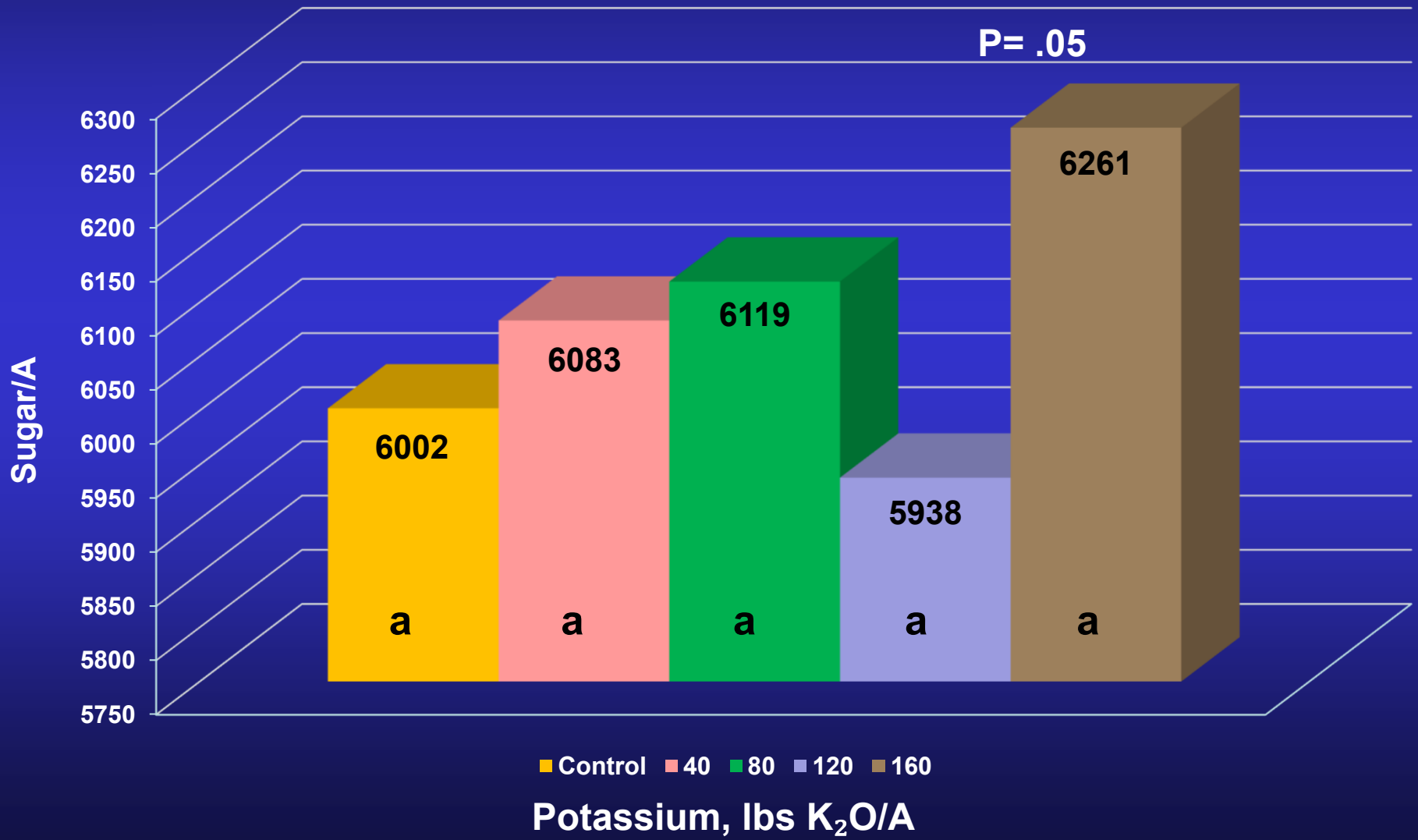
Response to Potassium Fertilizer

HoCP 96-540, 1st Stubble, TRS, Ronald Hebert, 2019



Response to Potassium Fertilizer

HoCP 96-540, 1st Stubble, Sugar/A, Ronald Hebert, 2019

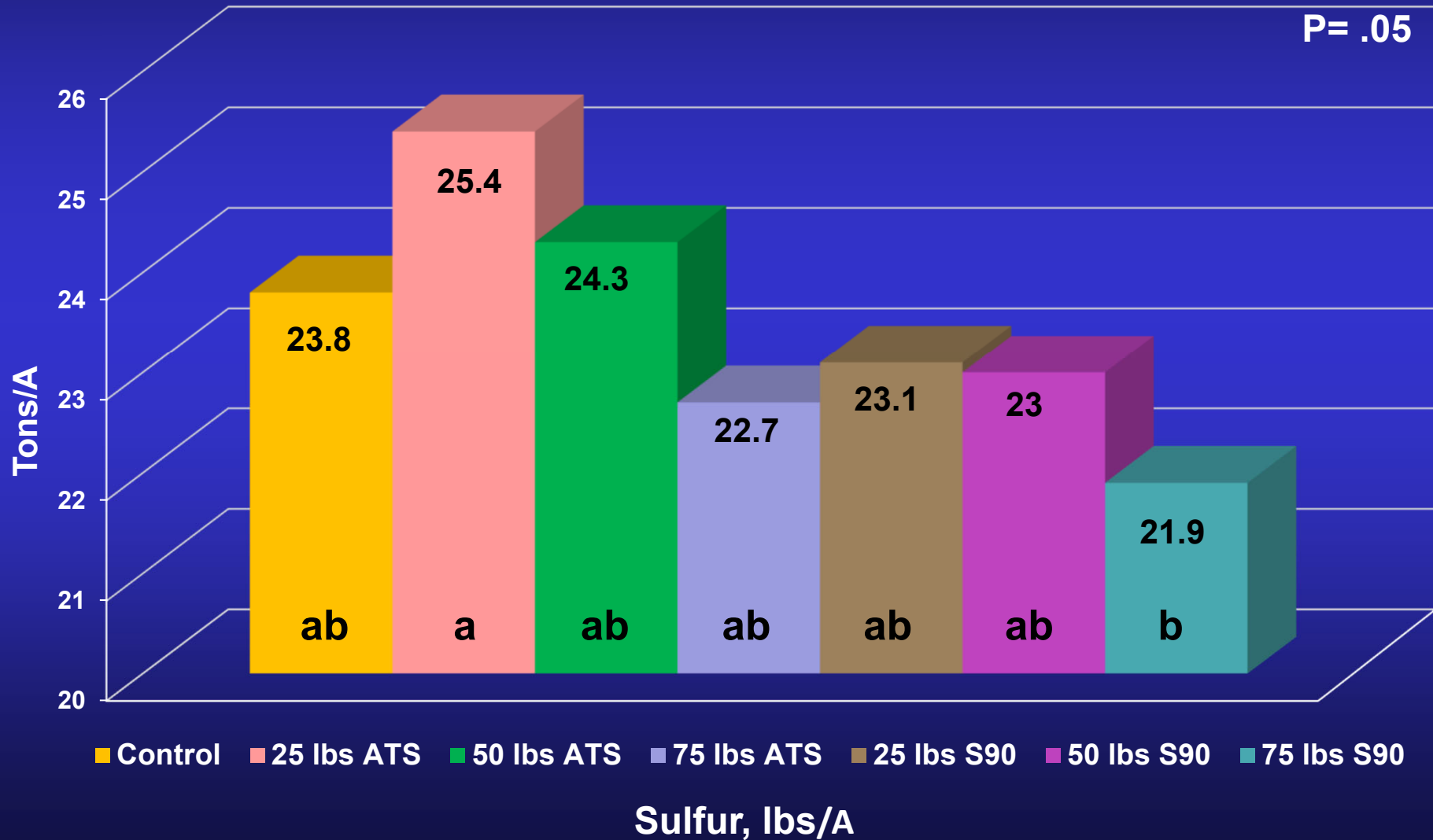


Sulfur (S)

- **Varieties: L01-299, HoCP 96-540, HoCP 09-804**
- **Crop Age: PC, 1R, 2R**
- **All soils tested low or medium sulfur**
- **S rates: 0, 25, 50, 75 lb S/A**
- **Sources: ATS (Liquid), S90 (Granular), AS (ammonium sulfate)**
- **Reps: 6**
- **Current recommendation: 24 lb S/A, if recommended by soil test. It may be necessary to revise this due to loss of atmospheric sulfur sources.**

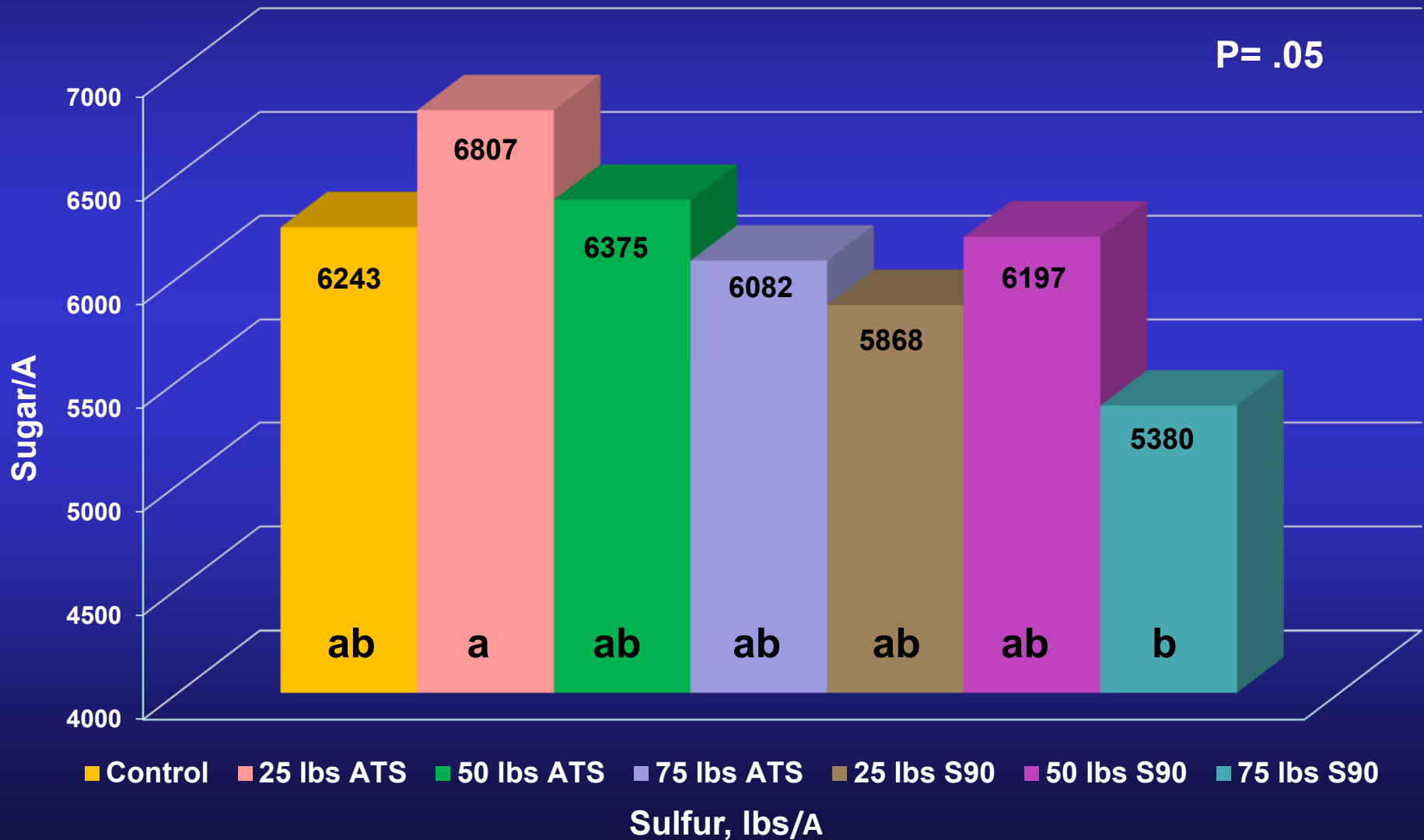
Response to Sulfur Fertilizer

HoCP 96-540, 1st Stubble, Tons/A, Rodrigue, 2019



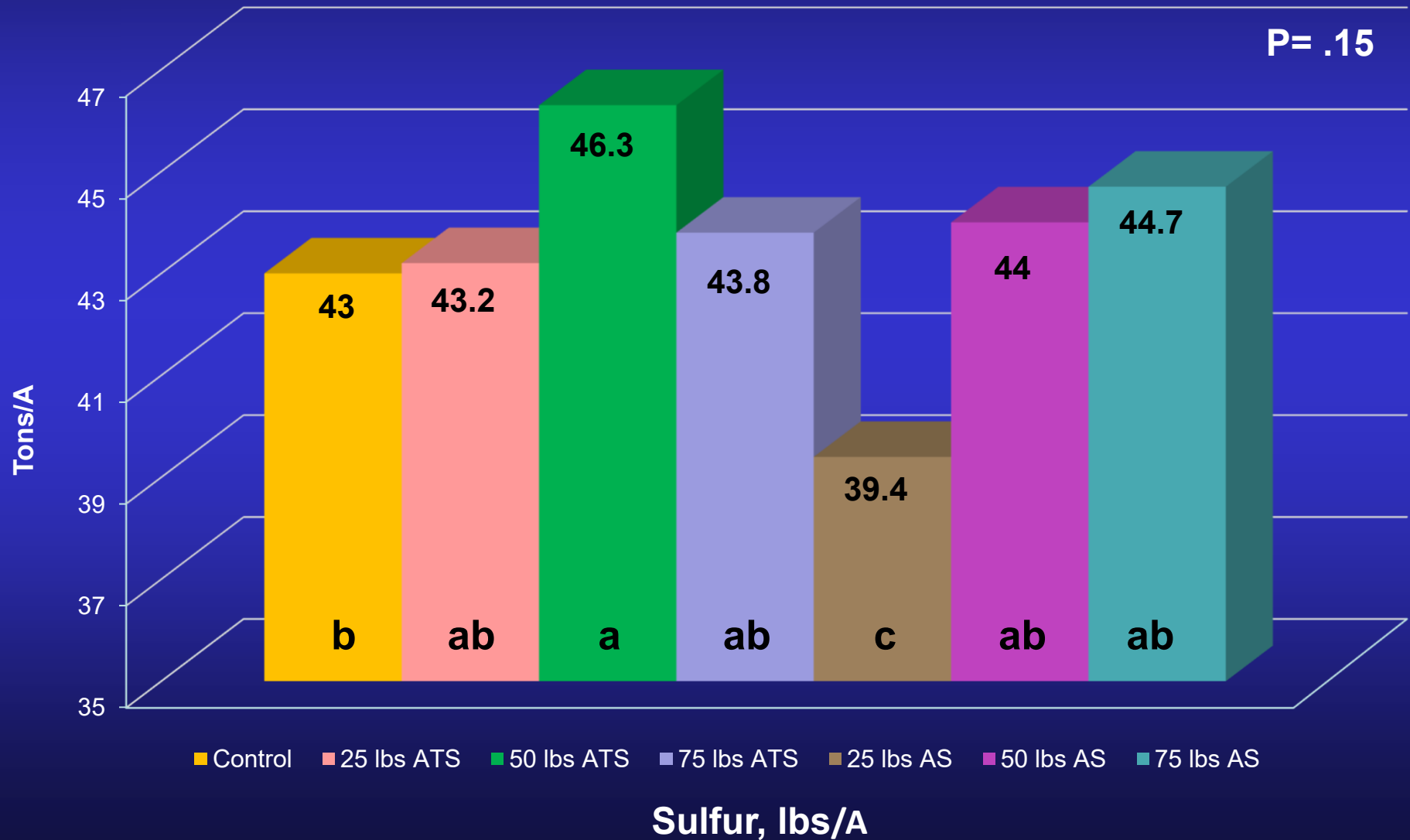
Response to Sulfur Fertilizer

HoCP 96-540, 1st Stubble, Sugar/A, Rodrigue, 2019



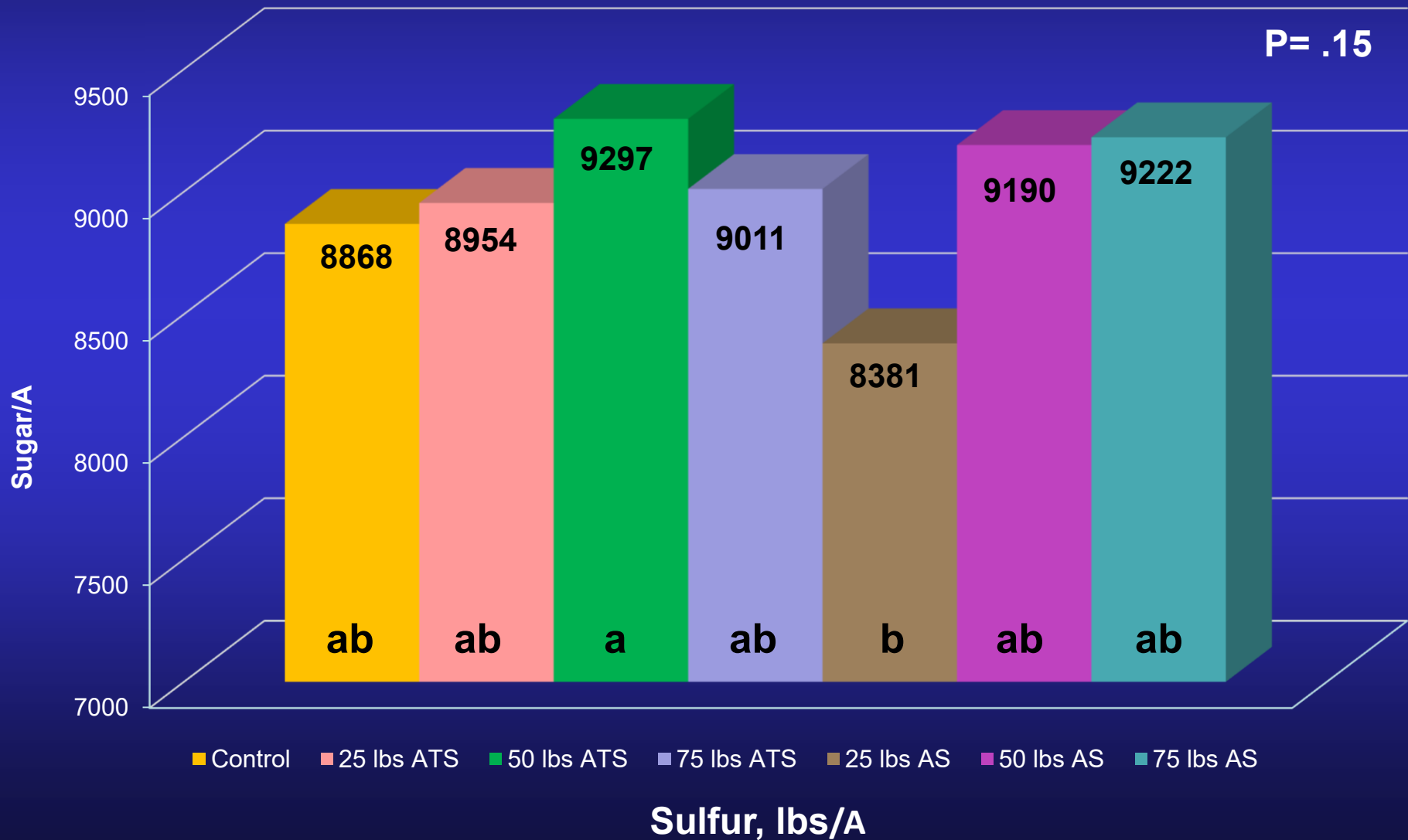
Response to Sulfur Fertilizer

HoCP 09-804, Plant Cane, Tons/A, Rebecca, 2019



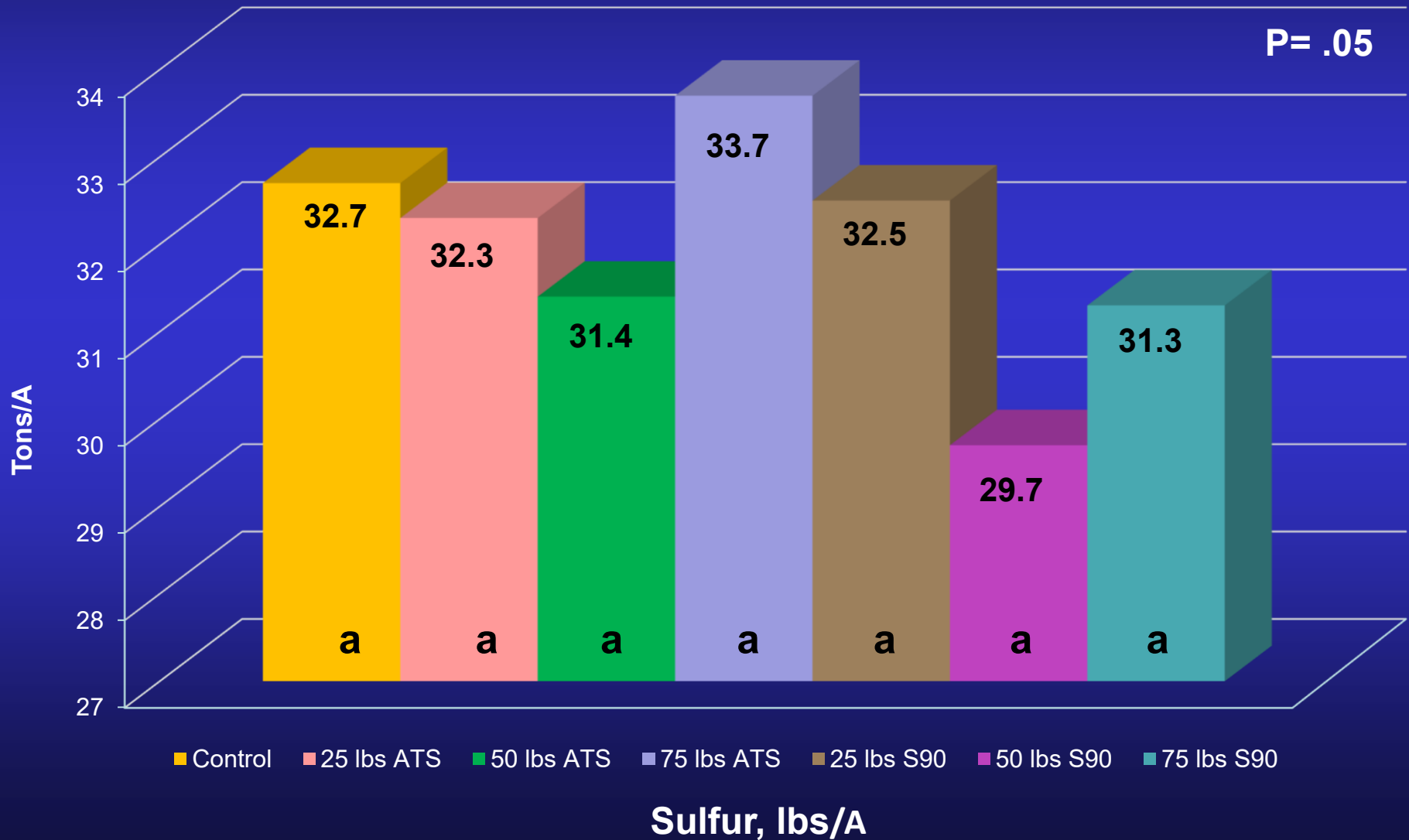
Response to Sulfur Fertilizer

HoCP 09-804, Plant Cane, Sugar/A, Rebecca, 2019



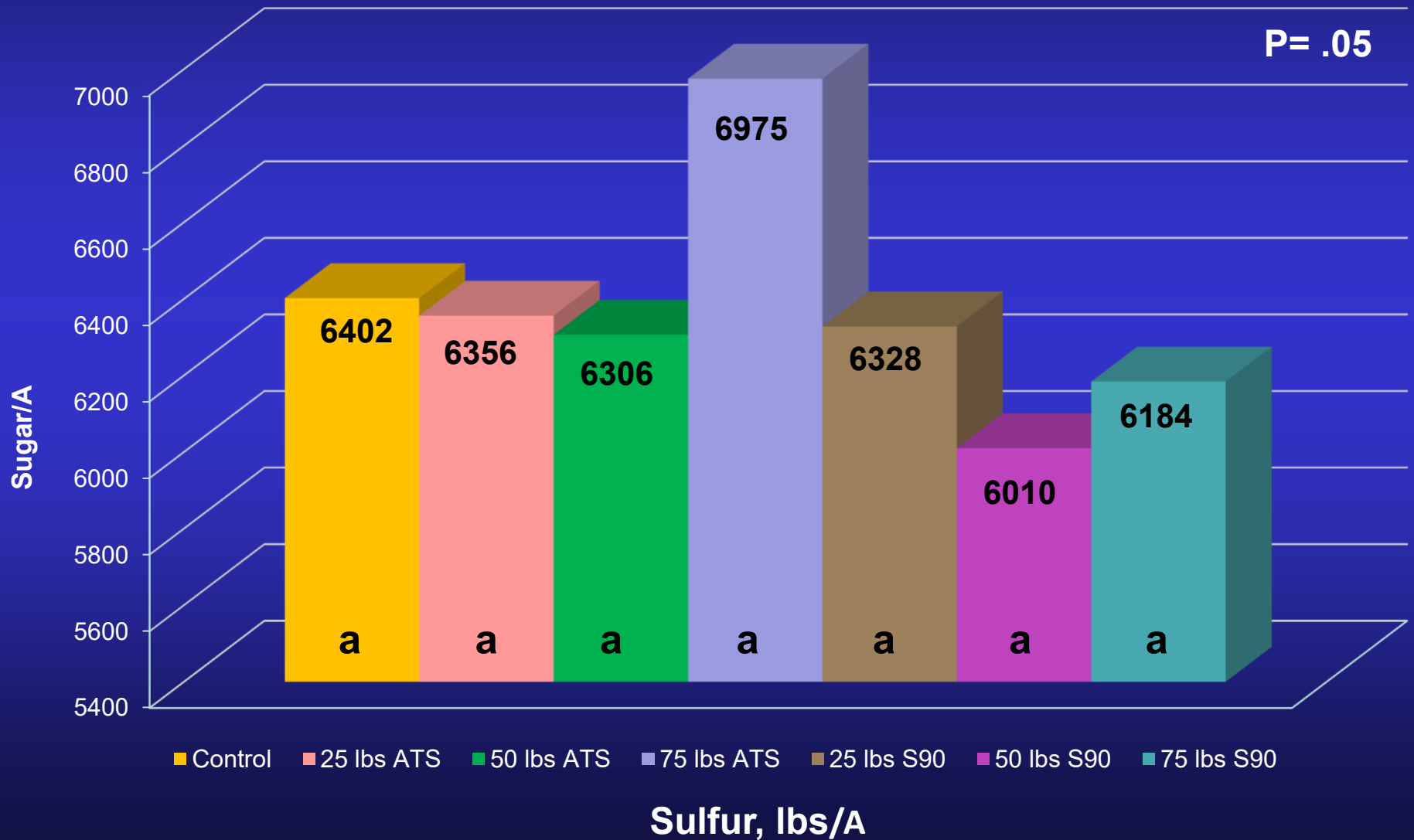
Response to Sulfur Fertilizer

L 01-299, 2nd Stubble, Tons/A, Richard, 2019



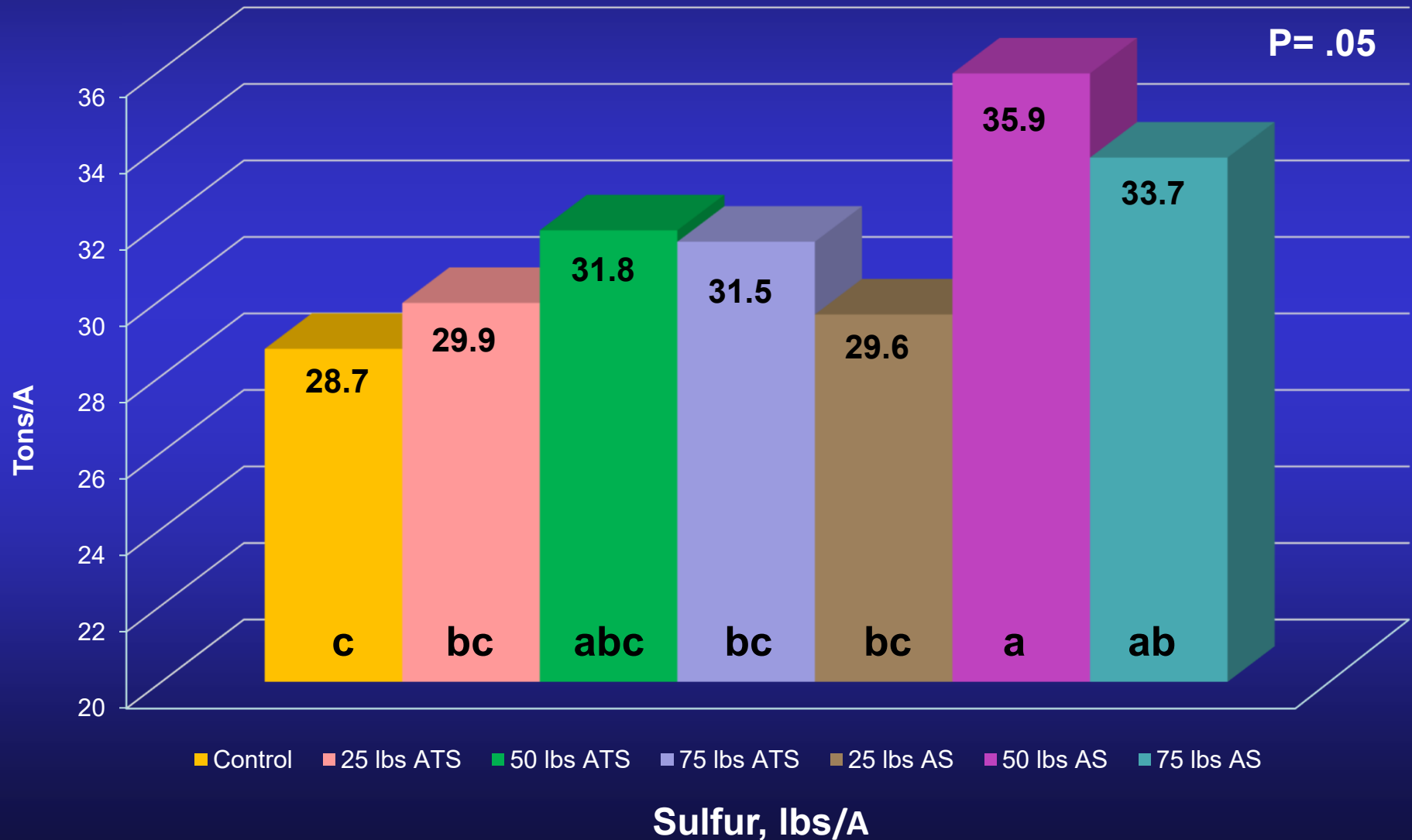
Response to Sulfur Fertilizer

L 01-299, 2nd Stubble, Sugar/A, Richard, 2019



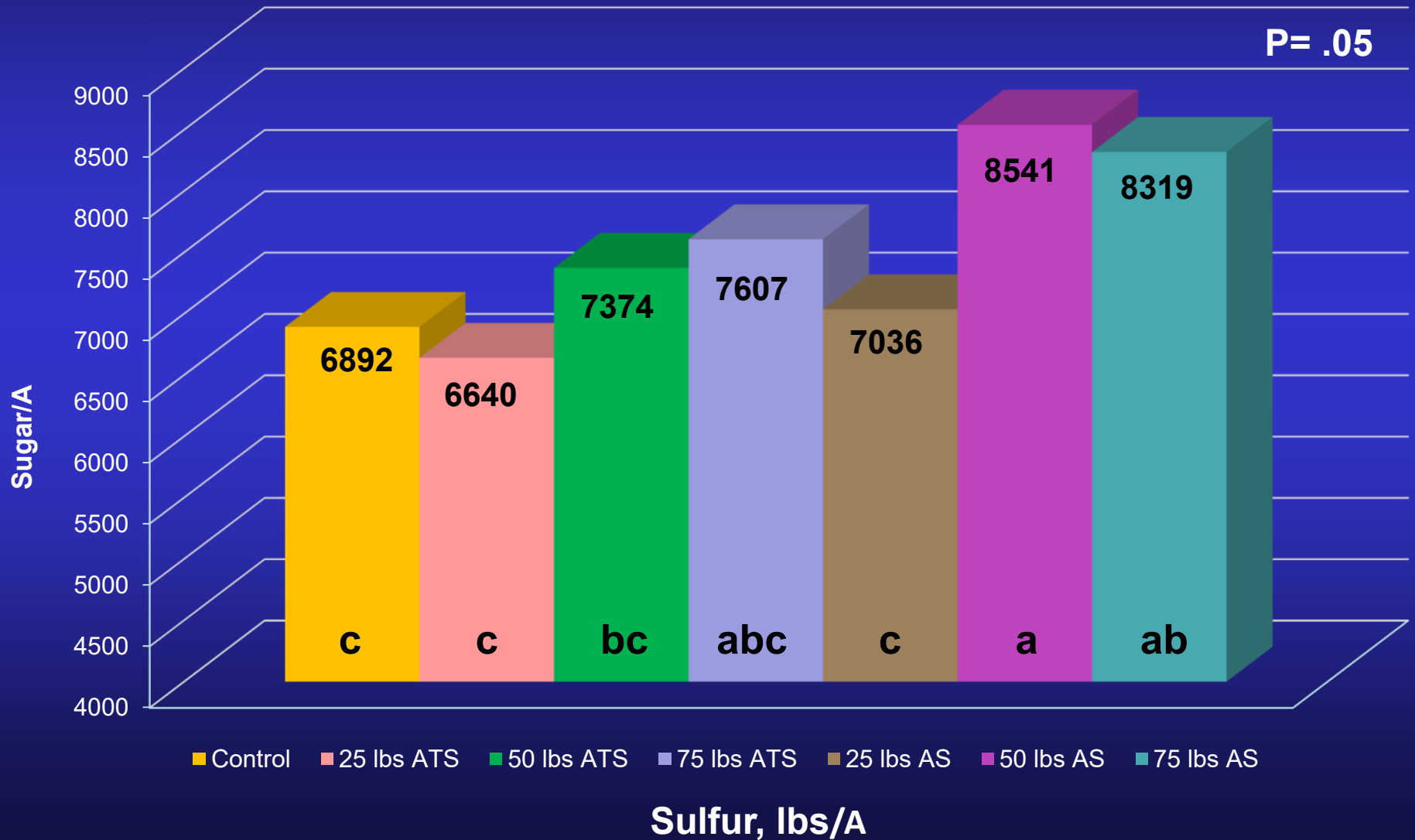
Response to Sulfur Fertilizer

L 01-299, Plant Cane, Tons/A, Robichaux, 2019



Response to Sulfur Fertilizer

L 01-299, Plant Cane, Sugar/A, Robichaux, 2019

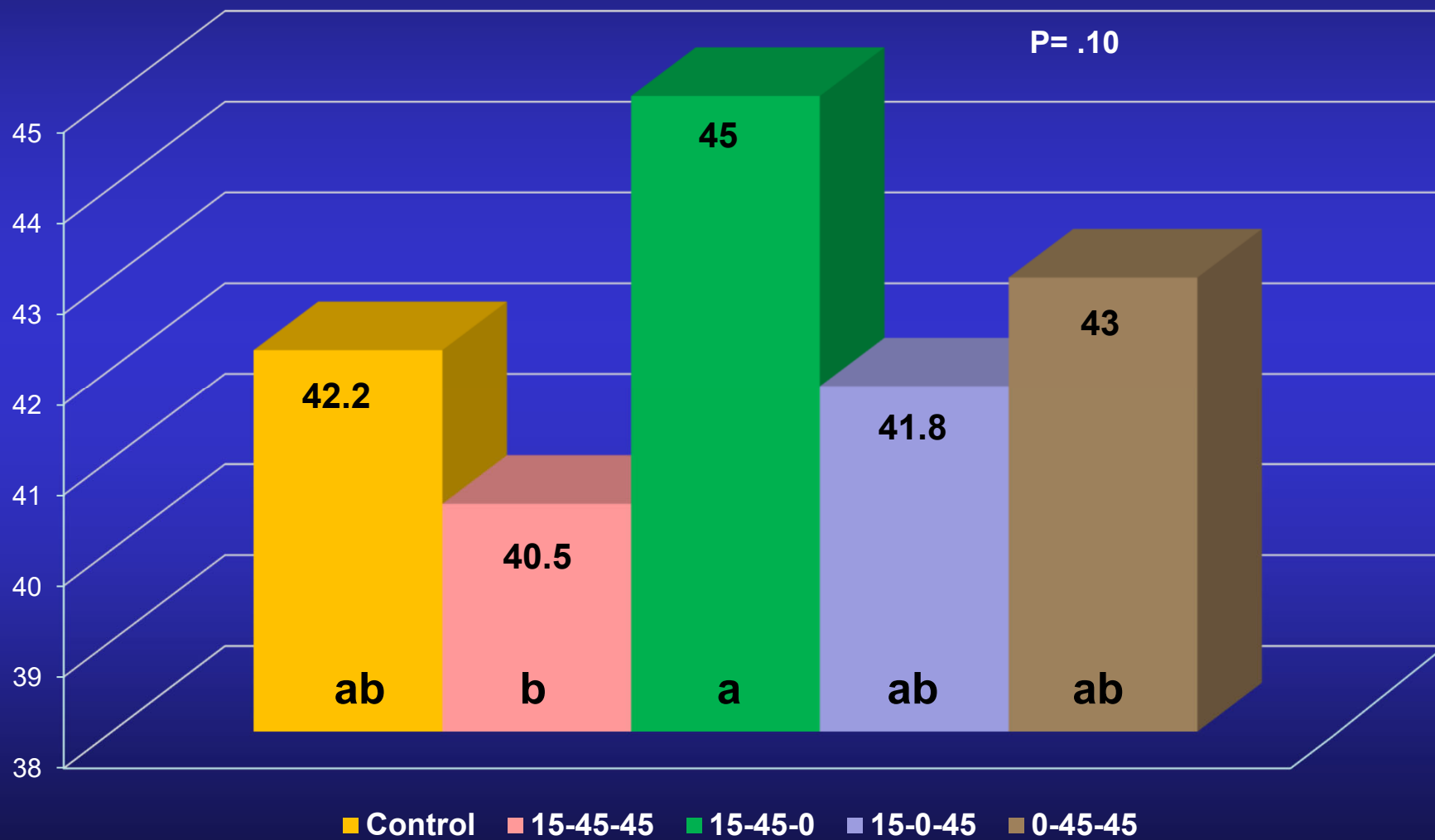


Starter Fertilizer

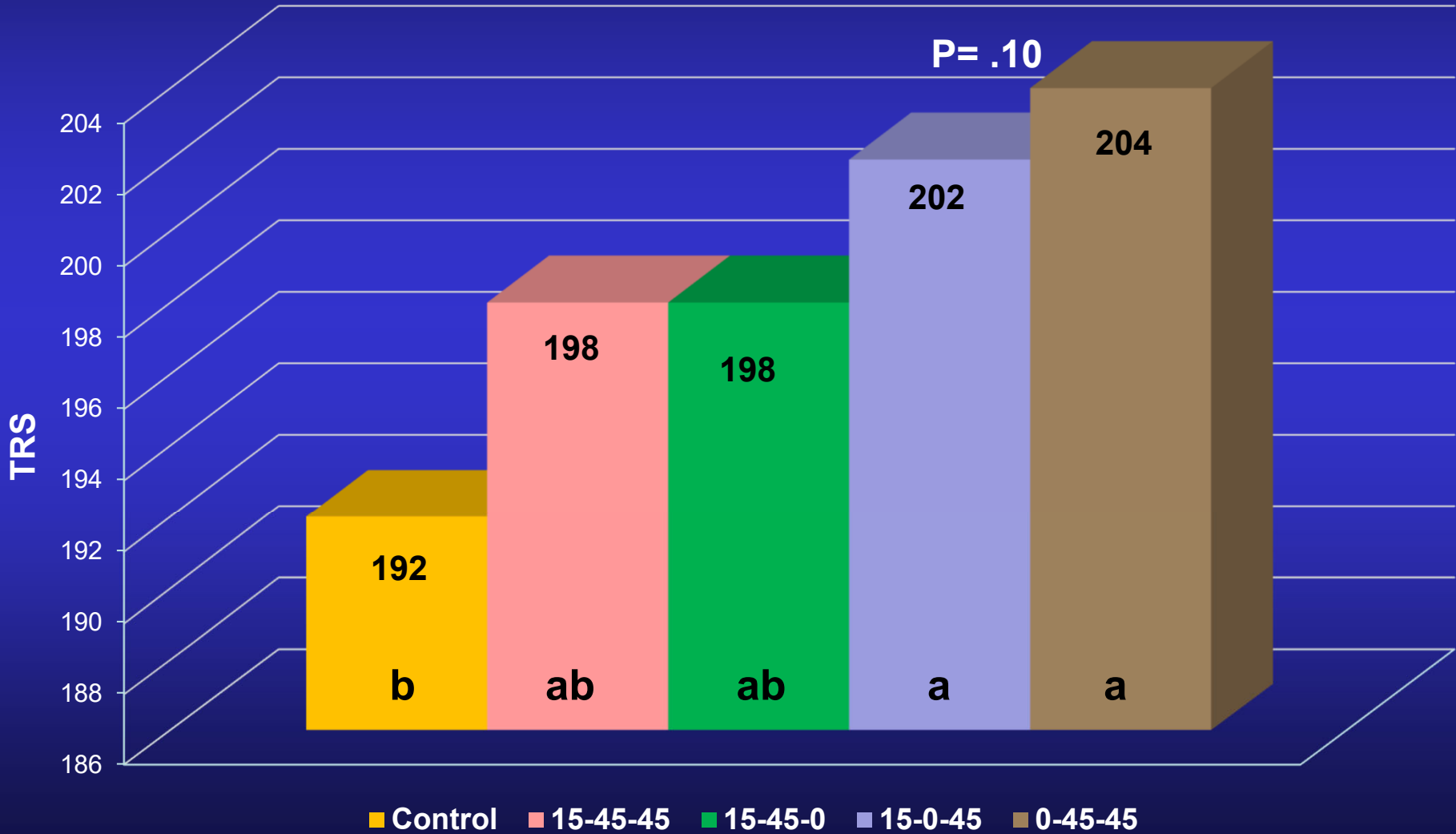
- Varieties: L01-299, HoCP 96-540
- Crop Age: PC, 1R
- Treatments:
 - No starter
 - 0-45-45
 - 15-0-45
 - 15-45-0
 - 15-45-45
- Reps: 6
- No interaction between varieties and starter fertilizer, so data averaged over variety.

Response to Starter Fertilizer

Averaged Over Varieties, Plant Cane, Tons/A, AF, 2019

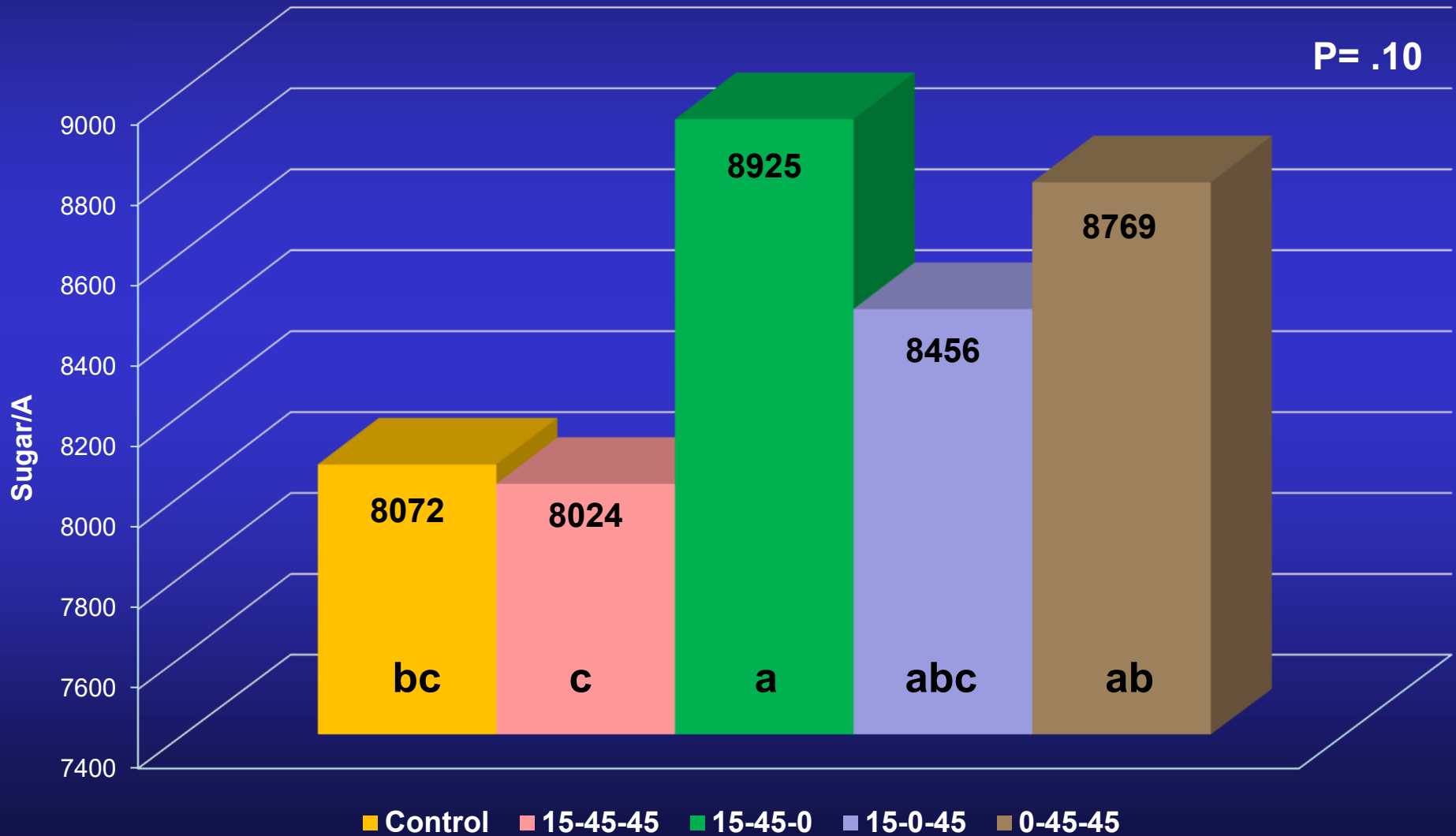


Response to Starter Fertilizer Averaged Over Varieties, Plant Cane, TRS, AF, 2019



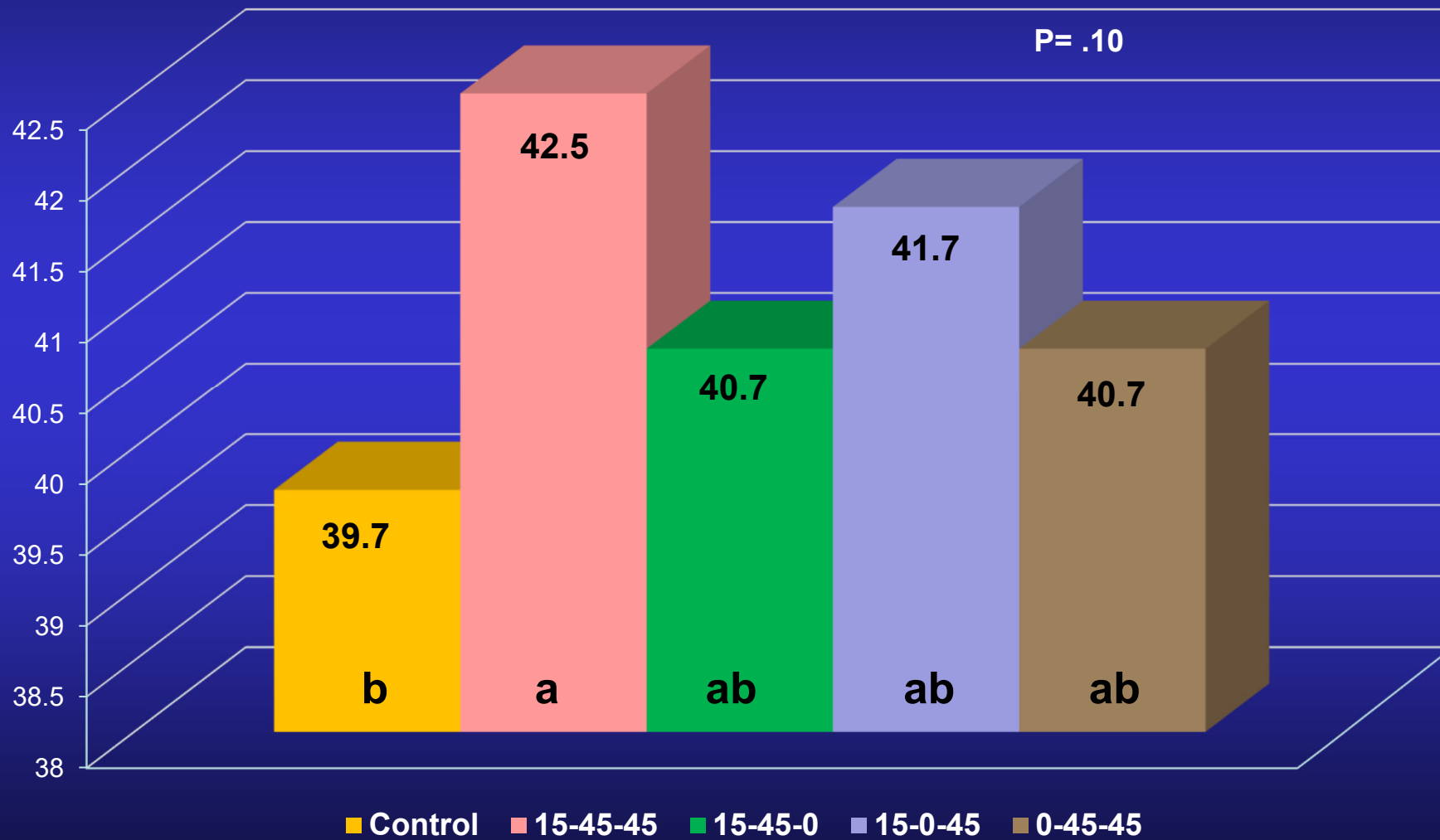
Response to Starter Fertilizer

Averaged Over Varieties, Plant Cane, Sugar/A, AF, 2019

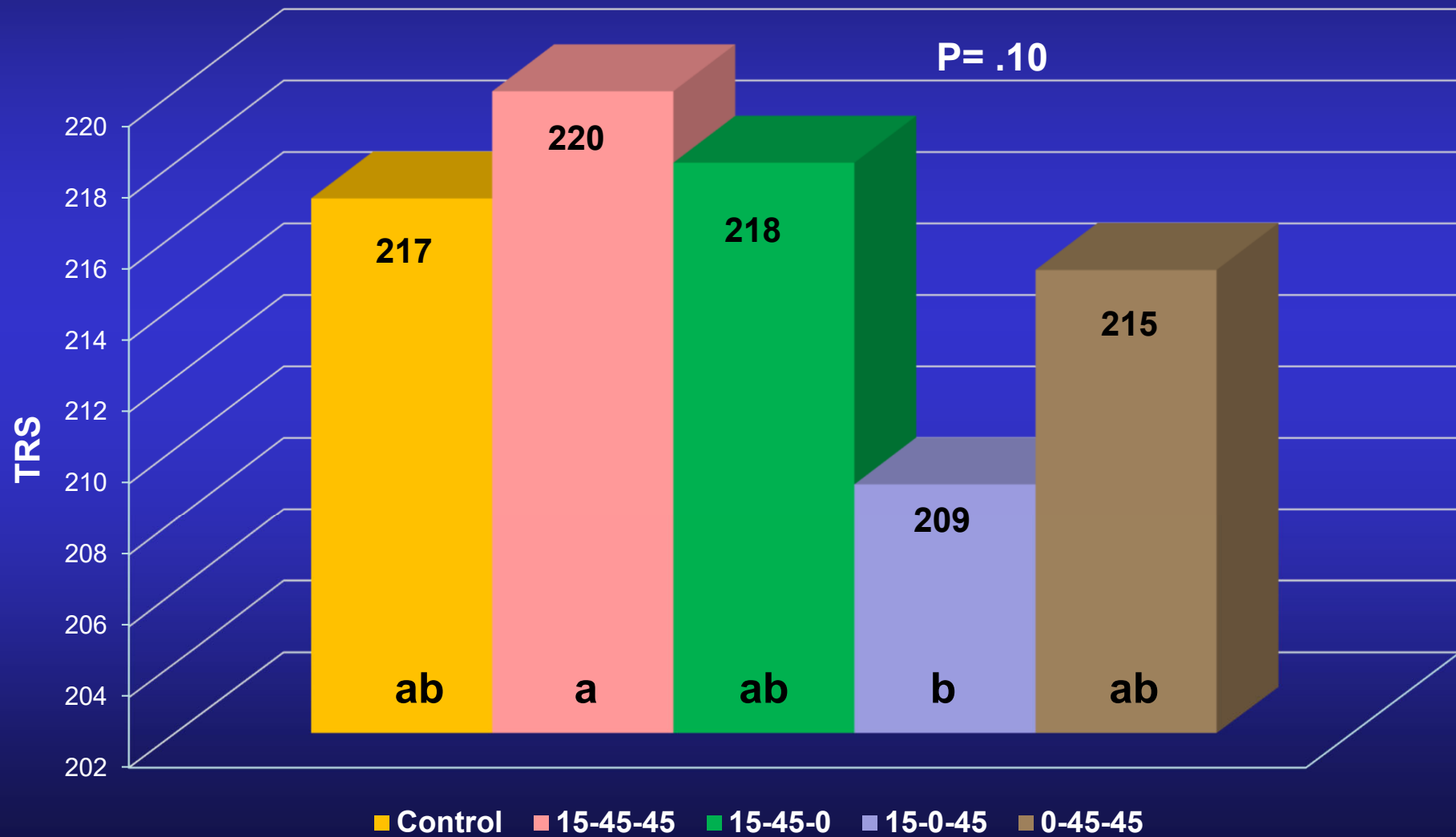


Response to Starter Fertilizer

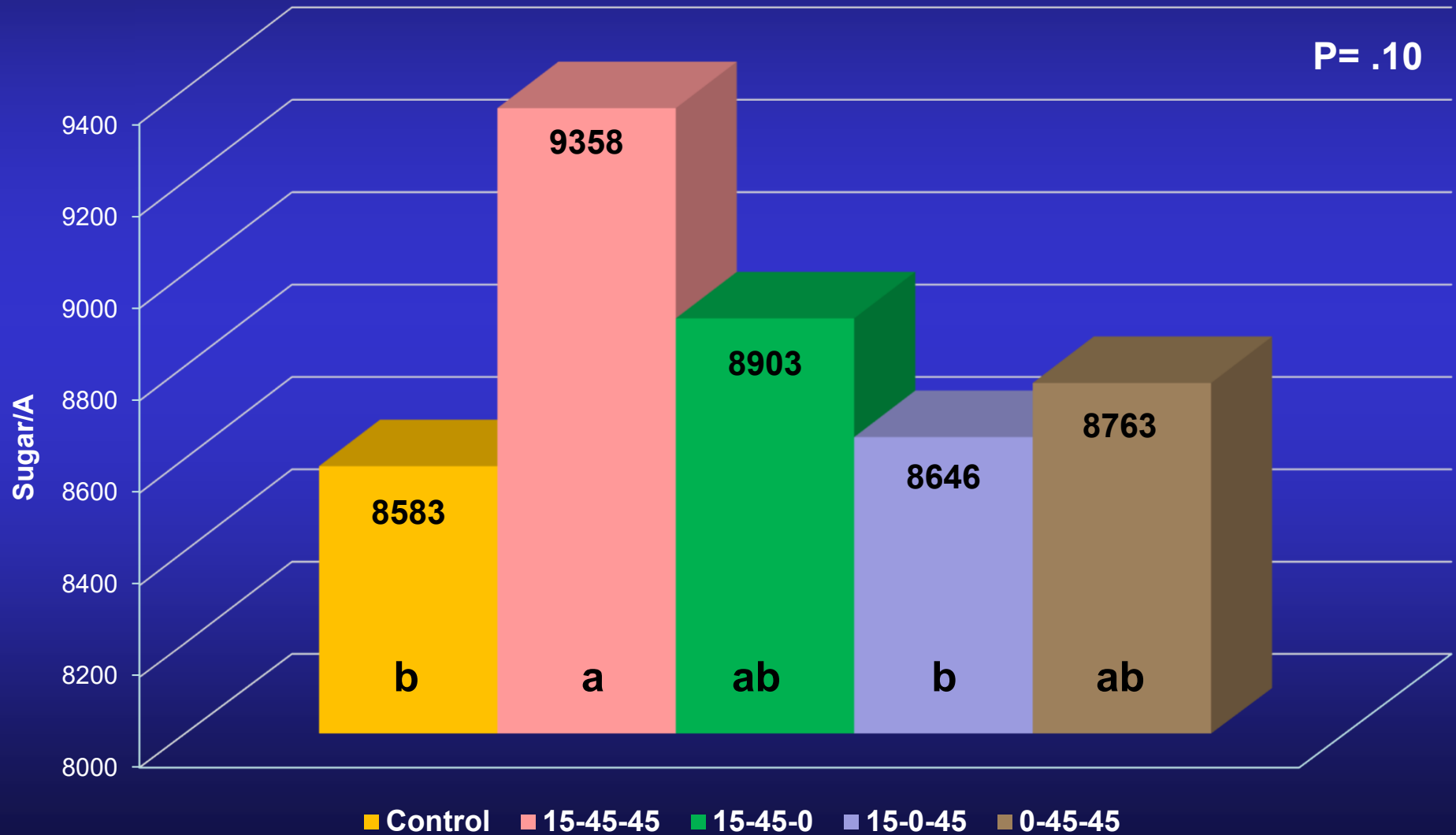
Averaged Over Varieties, 1st Stubble, Tons/A, AF, 2019



Response to Starter Fertilizer Averaged Over Varieties, 1st Stubble, TRS, AF, 2019



Response to Starter Fertilizer Averaged Over Varieties, 1st Stubble, Sugar/A, AF, 2019

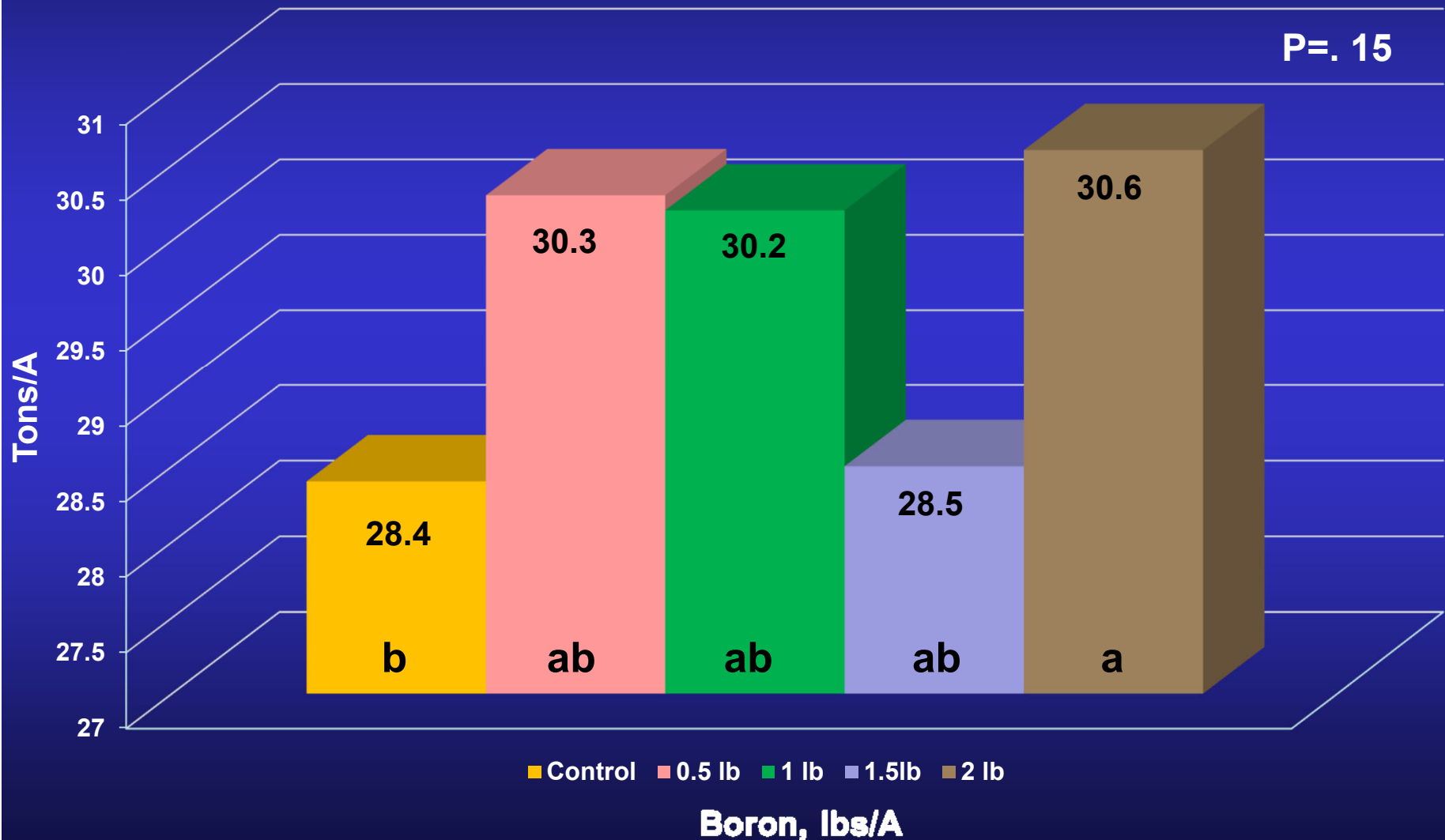


Boron (B)

- Varieties: L01-299
- Crop Age: 1R
- All soils tested low
- B rates: 0, 0.5, 1.0, 1.5, 2.0 lb B/A
- Sources: Liquid, foliar applied.
- Reps: 6
- An increasing number of soil samples have been found to test “low” for boron. Research was needed to determine if a yield response could be obtained with boron application

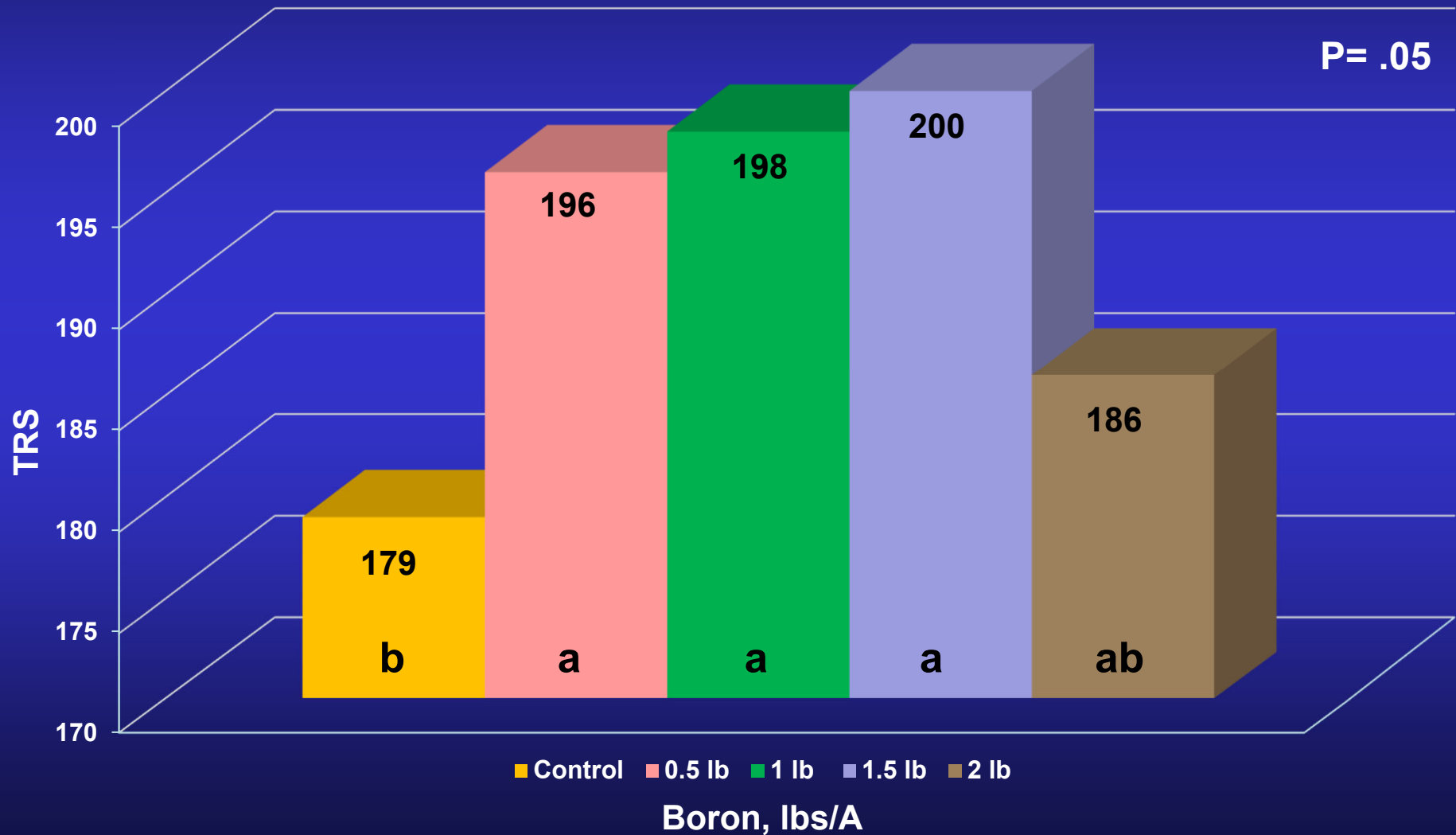
Response to Boron Fertilizer

L 01-299, 1st Stubble, Tons/A, Dugas, 2019



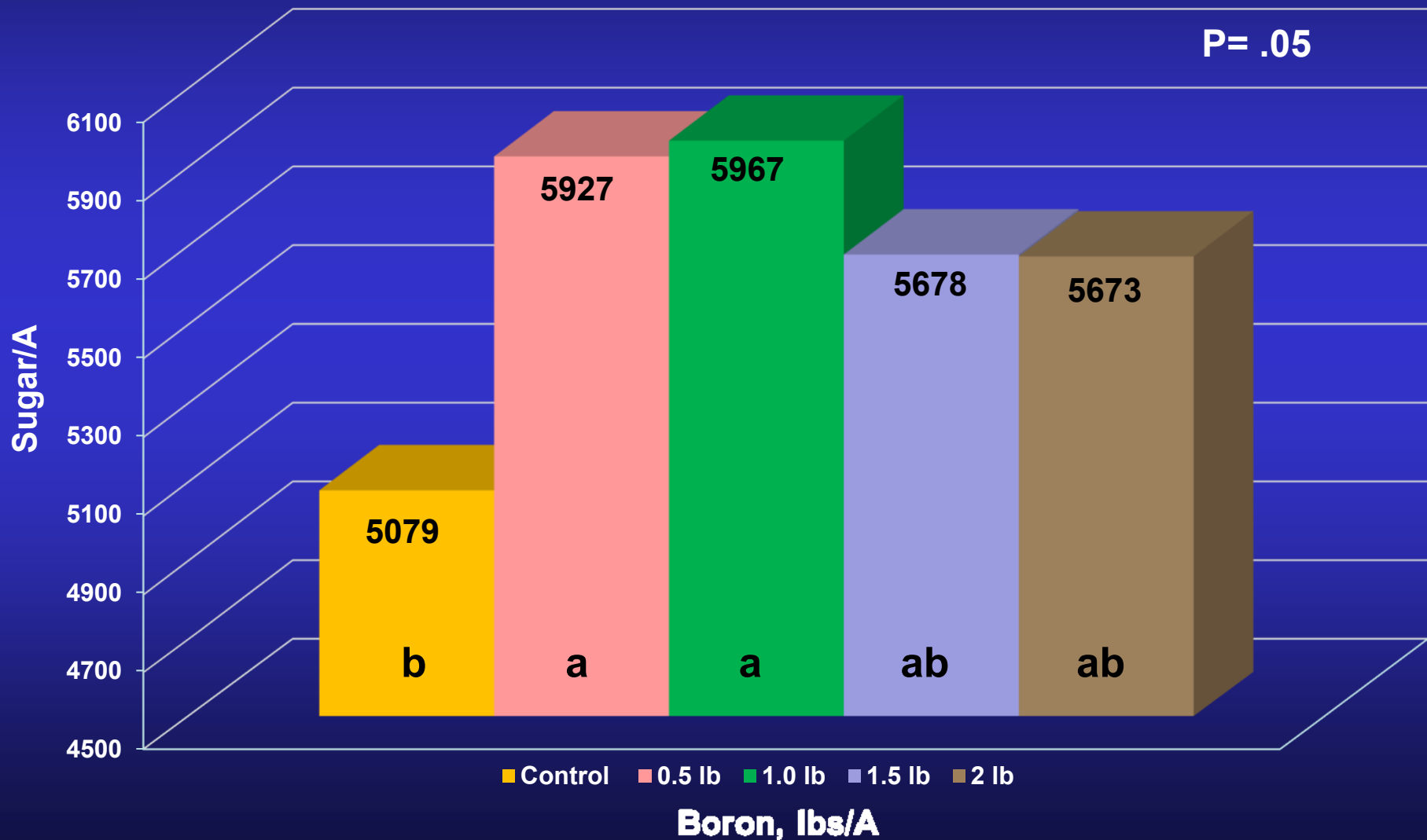
Response to Boron Fertilizer

L 01-299, 1st Stubble, TRS, Dugas, 2019



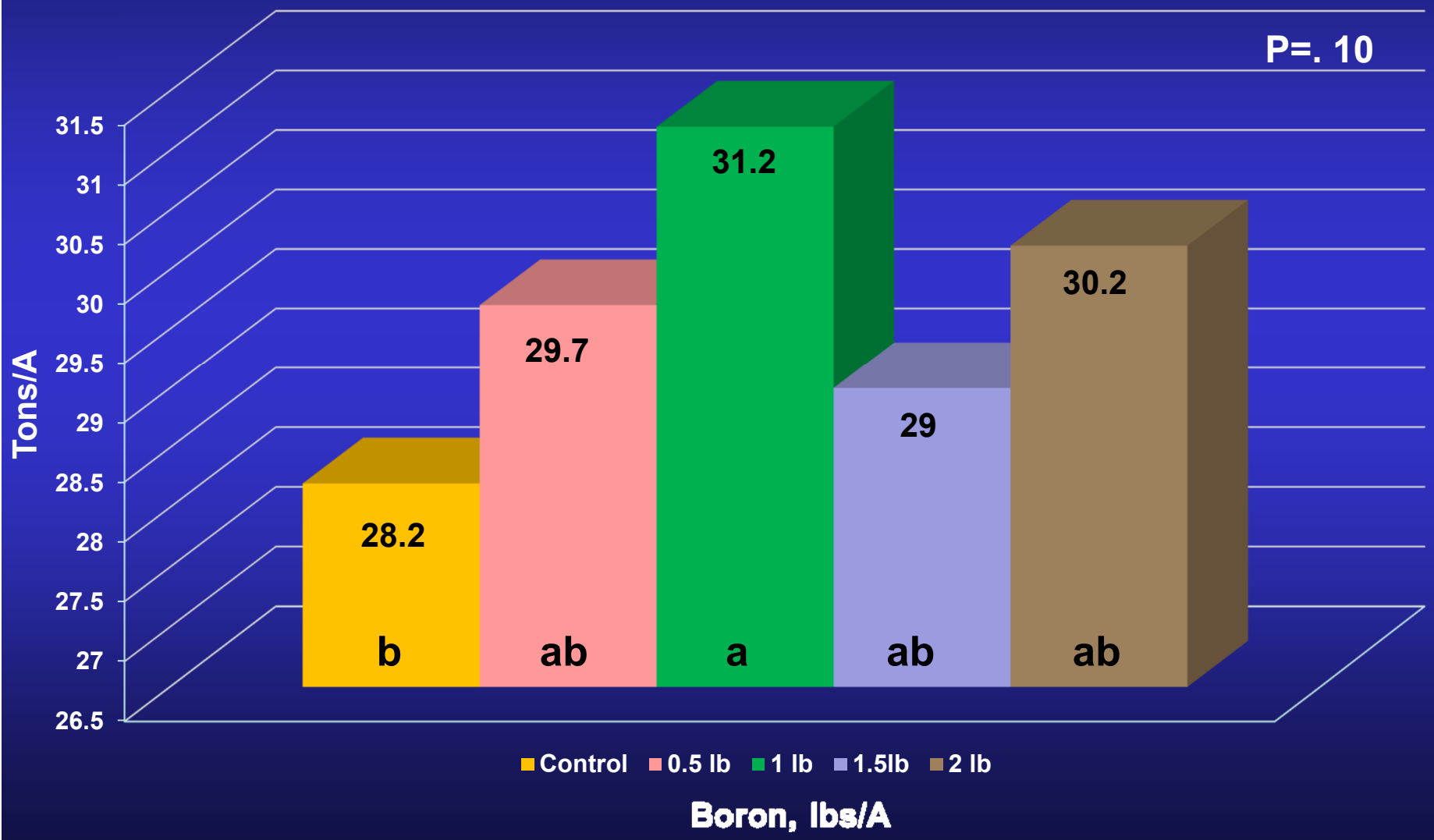
Response to Boron Fertilizer

L 01-299, 1st Stubble, Sugar/A, Dugas, 2019



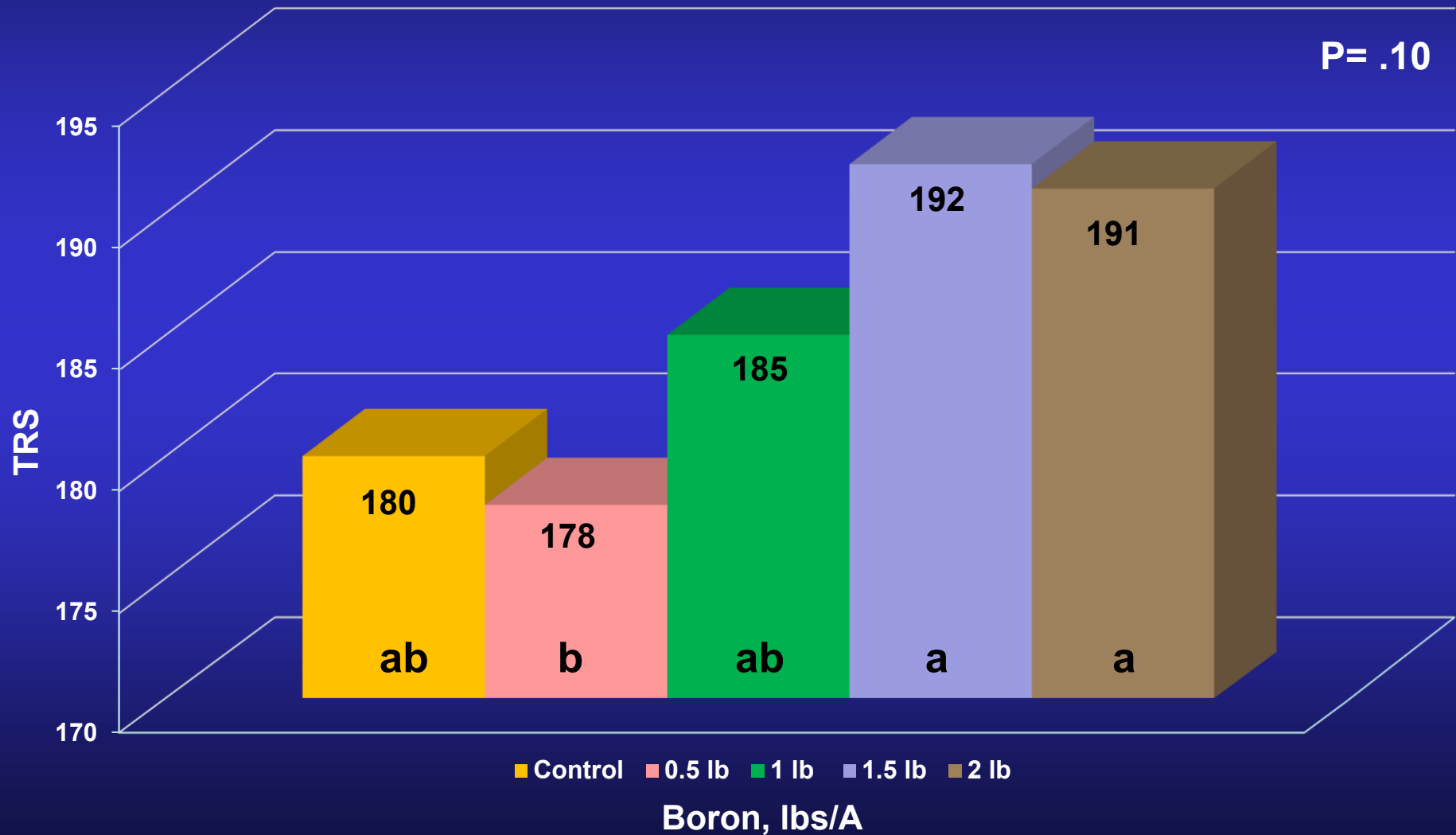
Response to Boron Fertilizer

L 01-299, 1st Stubble, Tons/A, Ronald Hebert, 2019



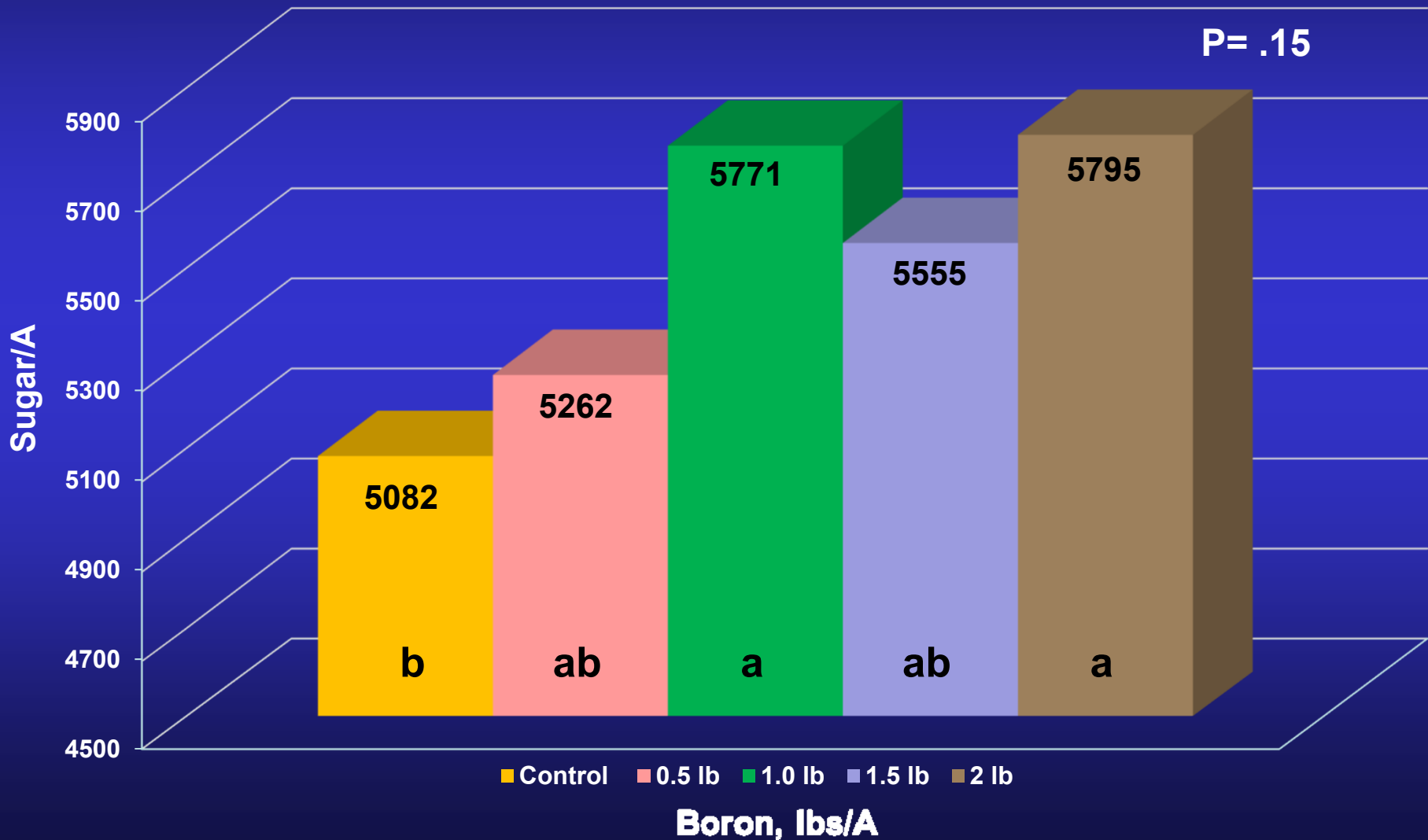
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Questions?